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Youth Labour Force Participation: 2008 to 2014

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- .. not available for a specific reference period
- ... not applicable
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- 0* value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- x suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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Youth Labour Force Participation: 2008 to 2014

by André Bernard, Analytical Studies Branch

In this *Economic Insights* article, the decline in the youth labour force participation rate from 2008 to 2014 is decomposed, in an accounting framework, into components attributable to changes in school enrolment and in students' and non-students' labour force participation. The data are analyzed by sex, province and immigrant status. Changes in the composition of youth not in the labour force by student status and type of education pursued are also examined, as are changes in the percentage of youth who are neither in the labour force nor enrolled in full-time studies. The analysis is based on Statistics Canada's Labour Force Survey from 1976 to 2014.

The labour force participation rate of 15- to 24-year-olds (the percentage who are employed or seeking employment) declined from 67.3% in 2008 to 64.2% in 2014, reflecting a 3.8-percentage-point drop from 2008 to 2012 followed by a slight increase (Chart 1). The decline was particularly pronounced among youth aged 15 to 19, whose participation rate fell 6.2 percentage points to 49.8% in 2014.

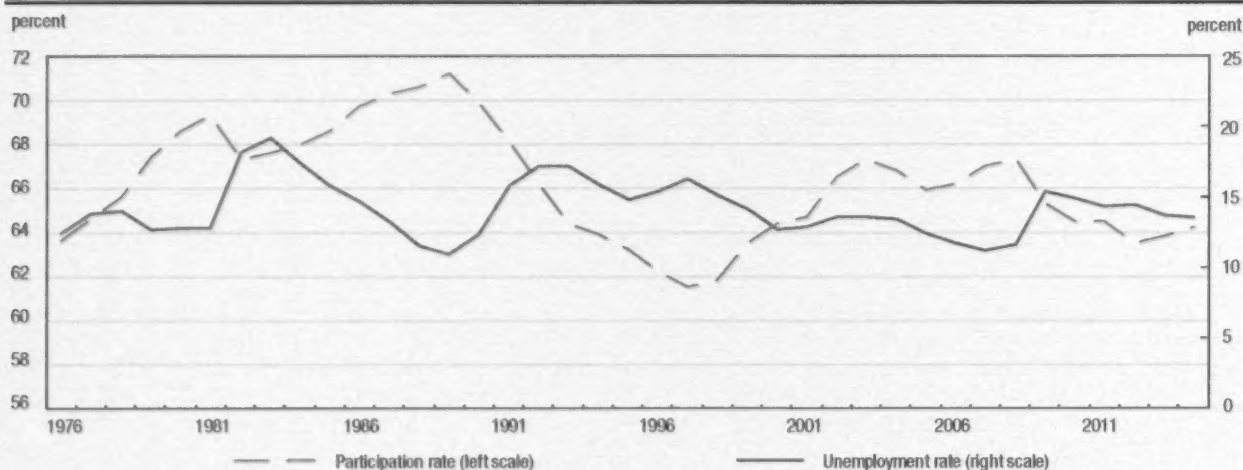
This was the first significant, prolonged decline in youth labour force participation since the early 1990s. From 1989 to 1997, the youth participation rate had fallen from 71.2% to 61.5% in the wake of the 1990-1992 recession and the slow labour market recovery that followed.

Youth labour force participation is generally negatively correlated with unemployment (Chart 1). When labour market conditions are less favourable, some young people may postpone labour market entry or pursue full-time studies without holding or seeking a job (Archambault and Grignon 1999; Beaudry, Lemieux and Parent 2000).¹

The participation rate of 25- to 54-year-olds tends to be more stable, even during recessions (Chart 2). For example, it changed little during the 2008-2009 recession, decreasing 0.3 percentage points from 2008 to 2011.² Workers of these ages are more likely to shift between employment and unemployment without leaving the labour force.

Chart 1

Participation rate and unemployment rate, population aged 15 to 24, 1976 to 2014

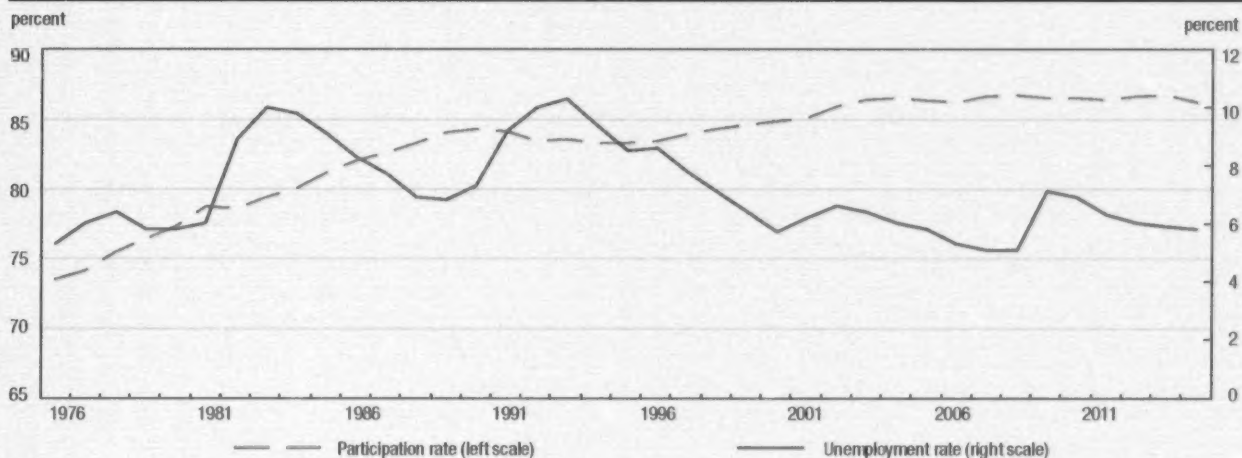


Source: Statistics Canada, Labour Force Survey (CANSIM table 282-0002).

1. Archambault and Grignon (1999) show that the business cycle accounted for one-third to one-half of the decline in the youth participation rate from 1989 to 1996, and that it also accounted for part of the change in enrolment rates. In an analysis of the 1976-to-1998 period, Beaudry, Lemieux and Parent (2000) show that the business cycle influences the participation rate of non-students, but that the enrolment rate is primarily influenced by demographic factors. In a more recent analysis, Cheung, Granovsky and Velasco (2015) show that the share of youth who attend school is moderately correlated with the unemployment rate. Fortin and Fortin (1999) show that the participation rate of youth and core-age workers varies depending on macroeconomic conditions.
2. The 0.3 percentage point decline in Canada reflected a 0.8 point decline among men and a 0.3 point increase among women. In the United States, unlike Canada, the participation rate of 25- to 54-year-olds decreased substantially in the wake of the recession from 2007 to 2009. Erceg and Levin (2013) provide an analysis of the contribution of cyclical factors to this decrease. Dernet and Modestino (2013) present a detailed analysis of trends in the participation rate of youth in the United States since the last recession.

Chart 2

Participation rate and unemployment rate, population aged 25 to 54, 1976 to 2014



Source: Statistics Canada, Labour Force Survey (CANSIM table 282-0002).

Analyzing trends in participation rates helps put changes in other labour market indicators, such as the unemployment rate, in context.³ For example, a decline in the unemployment rate resulting from transitions from unemployment to employment would not have the same interpretation as a decline in unemployment due to transitions out of the labour force.

Various factors can drive changes in the youth participation rate, resulting in different interpretations of these changes (Cheung, Granovsky and Velasco 2015). Because students usually participate less in the labour market than non-students, an increase in school enrolment alone can lower the participation rate.

A decline in youth labour force participation can also be attributed to a decline in the labour force participation of students, if they become less willing to combine studies and work.

Alternatively, a decline in the youth participation rate can reflect a decrease in labour force participation among non-students. Such a decline could be a concern, in that it would be driven by young people who would not be acquiring human capital at school, and would raise the proportion who are neither in the labour force nor enrolled in full-time studies.

The purpose of this analysis is to decompose, in an accounting framework, the decline in the youth participation rate from 2008 to 2014 into components attributable to changes in

school enrolment and to changes in students' and non-students' participation rates.⁴ Changes in the percentage of youth who are neither in the labour force nor enrolled in full-time studies are also examined, as are changes in the composition of youth not in the labour force by student status and type of education.

Given the substantial differences in school attendance between the 15- to 19-year-olds and 20- to 24-year-olds, these two age groups are analyzed separately. Results by immigrant status, sex and province are also presented. The results are compared with those from 1989 to 1997—the last prolonged decline in youth labour force participation.

The data are from Statistics Canada's Labour Force Survey (LFS) from 1976 to 2014. The analysis focuses on the periods from 2008 to 2014 and from 1989 to 1997.

As in Beaudry, Lemieux and Parent (2000) and Jennings (1998), annual data presented in the remainder of this paper refer to averages for the months of January to April and September to December. The summer months were excluded because of difficulties in identifying students in temporary summer jobs and non-students participating in the labour force on an ongoing basis.⁵

Enrolled students are defined as full-time students; as in Jennings (1998), part-time students are not considered to be enrolled. To be a labour force participant, a young person must be employed (full- or part-time⁶) or seeking employment.⁷

3. For example, see Bernard (2013).

4. The methodology is presented in the Appendix.

5. As illustrated in Chart A.1 in the Appendix, annual participation rates calculated based on months of school attendance are slightly lower than rates calculated based on 12 months, and the trends are the same.

6. See Morissette, Hou and Schellenberg (2015) for an analysis on trends in full-time employment.

7. Individuals who were temporarily laid-off or who are about to start a new job are also considered as part of the labour force.



Lower labour force participation of students explained most of decline in the participation rate among 15- to 19-year-olds

From 2008 to 2014, the participation rate of 15- to 19-year-olds fell 6.1 percentage points to 46.4%. Most of this decrease (70%) was attributable to lower labour force participation among students (Chart 3, Table 1). The participation rate of students thus fell from 44.8% in 2008 to 39.4% in 2014.⁸

Increased school enrolment accounted for 16% of the decline in the participation rate of 15- to 19-year-olds; a decrease in labour force participation among non-students accounted for 14%.

The percentage of youth aged 15 to 19 who were neither in the labour force nor enrolled in full-time studies changed little over this period and stood at 4.2% in 2014.

From 1989 to 1997, the participation rate of 15- to 19-year-olds had fallen 11.7 percentage points to 43.3%, almost double the decline between 2008 and 2014. The reasons for the earlier drop were similar to those for the more recent one. Lower labour force participation among students accounted for 69% of the decrease; the remainder was the result of a higher enrolment rate (19%) and lower labour force participation among non-students (10%).

Higher enrolment rates and lower labour force participation among non-students explained the decline in the participation rate of 20- to 24-year-olds

From 2008 to 2014, the participation rate of 20- to 24-year-olds fell 2.2 percentage points to 73.7%.⁹

Most (57%) of the decline was explained by increased enrolments.¹⁰ The remainder was the result of a decline in the participation rate of those not enrolled. The labour force participation of students changed little and did not contribute significantly to the decrease in the participation rate in this age group.

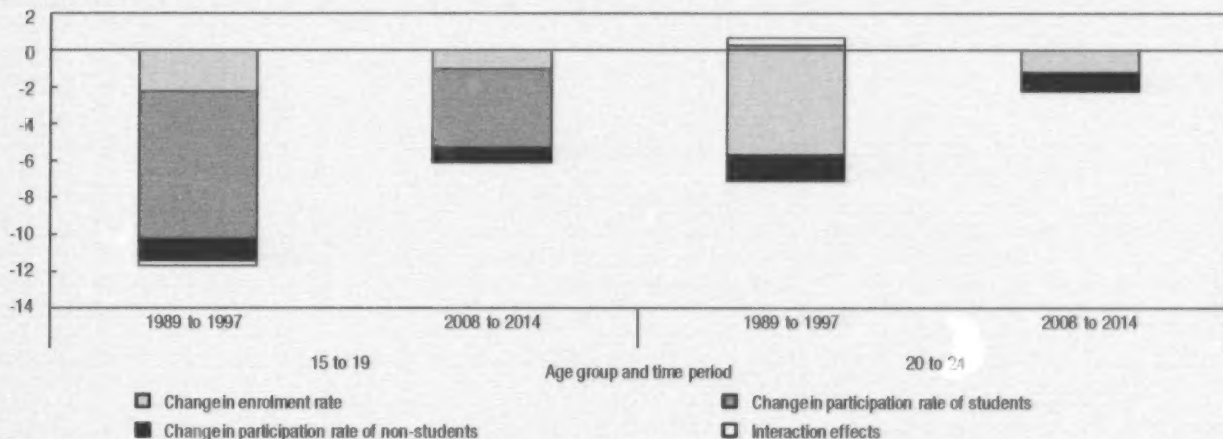
Owing to these trends, the percentage of 20- to 24-year-olds who were neither in the labour force nor enrolled in full-time studies rose from 7.5% in 2008 to 8.0% in 2014.

From 1989 to 1997, almost all (90%) of the 6.4-percentage-point decline in the participation rate of 20- to 24-year-olds, which then went from 79.1% to 72.7%, was explained by an increase in the enrolment rate. This rate increased significantly over the period, from 21.6% to 33.9%, reflecting both structural (Beaudry, Lemieux and Parent 2000) and cyclical (Archambault and Grignon 1999) factors.

Chart 3

Changes in labour force participation rate, by cause, population aged 15 to 19 and 20 to 24, 1989 to 1997 and 2008 to 2014

percentage points



Source: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.

8. Charts A.2 and A.3 in the Appendix show the trends from 1976 to 2014 in the participation rates of students and non-students and the enrolment rates of youth in the 15- to 19 and 20- to 24 age groups.
9. Numbers may not add up to totals because of rounding.
10. For all 15- to 24-year-olds, enrolment rates accounted for 19% of the decrease in the labour force participation rate from 2008 to 2014 (data not reported). Using an approach similar to the one in this study, Cheung, Granovsky and Velasco (2015) show that 9% of the decrease in the participation rate of youth aged 15- to 24-year-olds from 2007 to 2014 is the result of an increase in enrolment rates. The lowest percentage obtained in the study by Cheung, Granovsky and Velasco (2015) is attributable to the choice of reference year and the inclusion of part-time students as enrolled students.

Table 1

Participation rate and enrolment rate, population aged 15 to 19 and 20 to 24, 1989 to 1997 and 2008 to 2014

	1989	1997	Change	2008	2014	Change
	percent		percentage points	percent		percentage points
Aged 15 to 19						
Participation rate	55.0	43.3	-11.7	52.5	46.4	-6.1
Enrolment rate	76.2	82.1	5.9	78.9	81.5	2.6
Participation rate (students)	46.3	35.8	-10.5	44.8	39.4	-5.4
Participation rate (non-students)	82.9	78.1	-4.9	81.3	77.3	-4.0
Percentage neither in labour force nor enrolled	4.1	3.9	-0.1	4.0	4.2	0.2
Aged 20 to 24						
Participation rate	79.1	72.7	-6.4	75.8	73.7	-2.2
Enrolment rate	21.6	33.9	12.4	34.2	37.6	3.3
Participation rate (students)	42.7	44.2	1.5	51.2	51.2	-0.1
Participation rate (non-students)	89.1	87.3	-1.8	88.6	87.2	-1.4
Percentage neither in labour force nor enrolled	8.6	8.4	-0.2	7.5	8.0	0.5

Source: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.

Like their Canadian-born counterparts, immigrants aged 15 to 19 were less likely to combine studies and labour force participation

Participation rates of young immigrants are generally lower than those of their Canadian-born counterparts. This is largely because young immigrants are more likely to attend school and less likely to combine studies and labour force participation, especially at ages 15 to 19.

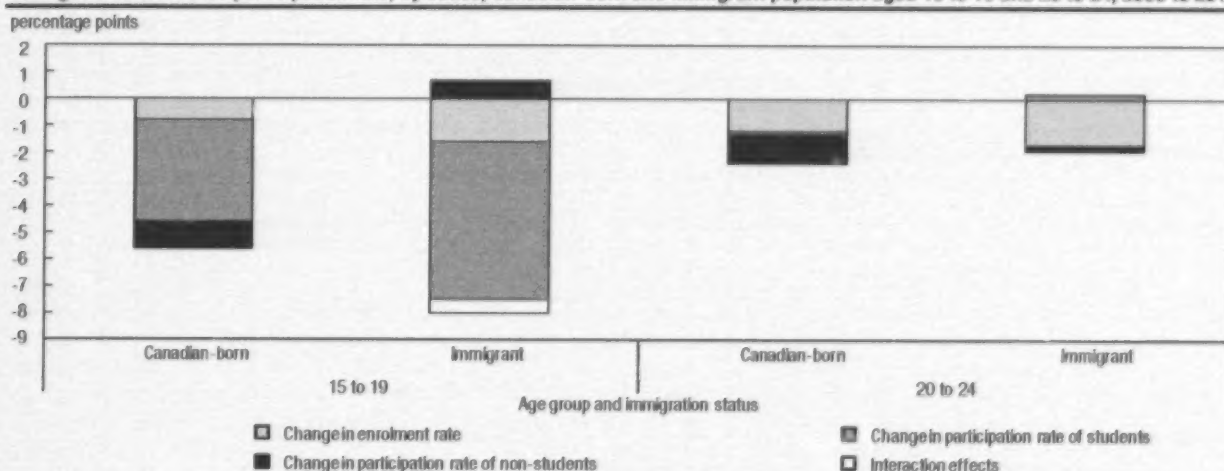
From 2008 to 2014, the labour force participation declined among both young immigrants and Canadian-born youth (Chart 4, Table 2).¹¹

Among young immigrants aged 15 to 19, the participation rate fell 7.3 percentage points to 32.2% in 2014. The decline in labour force participation of students explained 81% of this decrease. For their Canadian-born counterparts, this factor was also the most important.

Among Canadian-born youth aged 15 to 19, the labour force participation of non-students declined, which contributed to the decline in the participation rate. Among immigrants, however, it increased, which helped mitigate the decline in the participation rate for this group.

Chart 4

Changes in labour force participation rate, by cause, Canadian-born and immigrant population aged 15 to 19 and 20 to 24, 2008 to 2014



Source: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.

11. The Labour Force Survey has contained a question on immigrant status since 2006; trends by immigrant status cannot be examined for 1989 to 1997.



Table 2

Participation rate and enrolment rate, Canadian-born and immigrant population aged 15 to 19 and 20 to 24, 2008 to 2014

	Canadian-born			Immigrants		
	2008	2014	Change	2008	2014	Change
	percent		percentage points	percent		percentage points
Aged 15 to 19						
Participation rate	54.0	48.4	-5.6	30.5	32.2	-7.3
Enrolment rate	70.2	80.5	2.3	84.5	88.6	4.1
Participation rate (students)	46.2	41.4	-4.8	33.4	28.4	-7.0
Participation rate (non-students)	81.9	77.3	-4.7	73.0	77.8	4.7
Percentage neither in labour force nor enrolled	3.9	4.4	0.5	4.2	2.5	-1.6
Aged 20 to 24						
Participation rate	77.3	75.0	-2.3	66.9	65.3	-1.6
Enrolment rate	32.0	36.1	3.2	42.6	46.0	4.3
Participation rate (students)	52.7	52.5	-0.2	44.1	44.7	0.5
Participation rate (non-students)	89.3	87.7	-1.6	83.9	83.6	-0.3
Percentage neither in labour force nor enrolled	7.2	7.9	0.7	9.3	8.7	-0.5

Sources: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.

Decline in labour force participation of immigrants aged 20 to 24 reflects higher enrolment

From 2008 to 2014, the participation rate of immigrants aged 20 to 24 fell slightly from 66.9% to 65.3%. The decline was entirely the result of increased school enrolment, which rose from 42.6% to 46.9%. Among their Canadian-born counterparts, this factor accounted for slightly more than half the decline in the participation rate.

Among both 15- to 19-year-olds and 20- to 24-year-olds, the percentage of immigrants neither in the labour force nor enrolled in full-time studies declined, in contrast to an increase among the Canadian-born. Thus, the increase among young Canadians overall would have been greater if immigrants had not been included.

Greatest declines in labour force participation at ages 15 to 19 in Western Canada

From 2008 to 2014, similar declines were observed in the participation rates of young men and women aged 15 to 19. In both cases, the decreases were driven by lower labour force participation among students.

However, there were notable differences between provinces. Declines in labour force participation at ages 15 to 19 were larger in the Prairie Provinces and British Columbia, and smaller in Quebec. Decreases in Ontario and the Atlantic provinces were closer to the national average (Chart 5, Table A.1 in Appendix).

In the Prairie Provinces, from 2008 to 2014, the participation rate of 15- to 19-year-olds fell 9.4 percentage points to 50.0%.

Three-quarters of this decline was the result of lower labour force participation among students. In British Columbia, the participation rate fell 8.1 percentage points to 45.2%; 80% of this drop was the result of lower labour force participation among students.

Only in British Columbia did the enrolment rate of 15- to 19-year-olds decline. The rate had risen from 76.0% in 2008 to 77.8% in 2013, but then fell to 73.9% in 2014. The net decrease in the enrolment rate created upward pressure on the participation rate. At the same time, non-students' participation rate fell sharply, from 83.5% to 73.5%.

As a result, the percentage of 15- to 19-year-olds in British Columbia who were neither in the labour force nor enrolled in full-time studies increased from 4.0% to 6.9%. By contrast, the percentage changed little in Canada as a whole.

From 2008 to 2014, the participation rate of Quebec youth aged 15 to 19 fell 2.6 percentage points from 53.4% to 50.8%. This decrease was less than half that of Canada as a whole.

The factors behind the decline in Quebec differ from those for the country overall. In Quebec, 76% of the decrease in labour force participation was the result of higher enrolment rates, whereas this factor accounted for 16% of the decline in the participation rate for Canada.

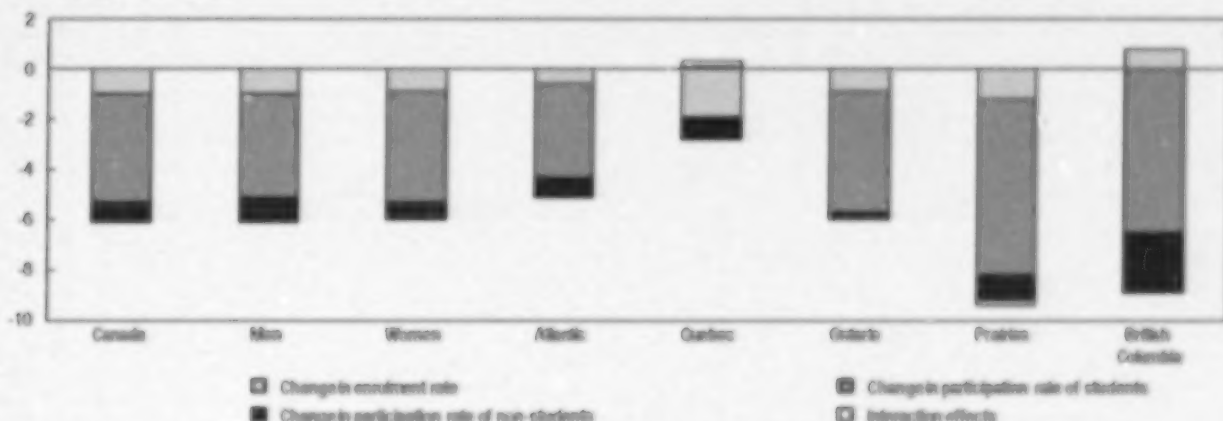
Quebec students aged 15 to 19 were about as likely to participate in the labour force in 2014 as in 2008. This contrasts with Canada as a whole, where the decline in students' labour force participation was the main factor behind the decrease in the participation rate.



Chart 5

Changes in labour force participation rate, by cause, population aged 15 to 19, 2008 to 2014

percentage points



Source: Statistics Canada, Labour Force Survey, annual calculations based on the months of January to April and September to December.

Trends among 20- to 24-year-olds differed significantly by sex and province

From 2008 to 2014, the participation rate of young men aged 20 to 24 fell from 78.2% to 74.9%, a 3.3-percentage-point decline driven almost equally by lower labour force participation among non-students and by an increase in enrolment (Chart 6, Table A.2 in Appendix).

The decrease in the women's participation rate was smaller. It went from 73.4% to 72.4% over the period. The women's enrolment rate rose, and labour force participation among non-students declined, which created downward pressure on the participation rate. However, an increase in the labour force participation of female students mitigated the decline in the participation rate.

From 2008 to 2014, British Columbia and the Prairie Provinces recorded the greatest declines in labour force participation among 20- to 24-year-olds. The rate increased in the Atlantic Provinces, and declined to a lesser extent in Quebec than in the rest of Canada. In Ontario, the decrease in the participation rate was similar to the national average.

In British Columbia, the participation rate of 20- to 24-year-olds declined 4.2 percentage points to 72.0%, the largest decrease of any region in the country. Unlike Canada as a whole, where rising enrolment was behind most of the decline in labour force participation, in British Columbia, the main factor was the decrease in non-students' labour force participation.

Consequently, the percentage of 20- to 24-year-olds in British Columbia who were neither in the labour force nor enrolled in full-time studies increased the most: from 6.4% in 2008 to 8.6% in 2014.

In the Prairie Provinces, the participation rate of 20- to 24-year-olds fell 3.5 percentage points to 77.4%, a decrease greater than the national average. About half this drop was the result of lower labour force participation among non-students; the remainder was mainly the result of increased enrolment.

Quebec recorded a more modest decline in the participation rate of 20- to 24-year-olds: from 76.5% in 2008 to 75.7% in 2014. An increase in enrolment, and to a lesser extent, a decrease in non-students' labour force participation contributed to the decline. At the same time, students' labour force participation increased, which created upward pressure on the participation rate.

The Atlantic Provinces were the only region where the participation rate increased among 20- to 24-year-olds from 2008 to 2014, rising by one percentage point to 73.6%. Almost all of this increase was the result of an increase in non-students' labour force participation.

Thus, although this factor contributed to a decrease in the participation rate elsewhere, especially British Columbia, it contributed to an increase in the participation rate in the Atlantic Provinces.

More high school graduates pursuing university studies

The decrease in labour force participation among 15- to 24-year-olds¹² from 2008 to 2014 implies an increase in the share of young people not in the labour force. This section focuses on changes in the composition of that group by student status, educational attainment and type of institution attended.

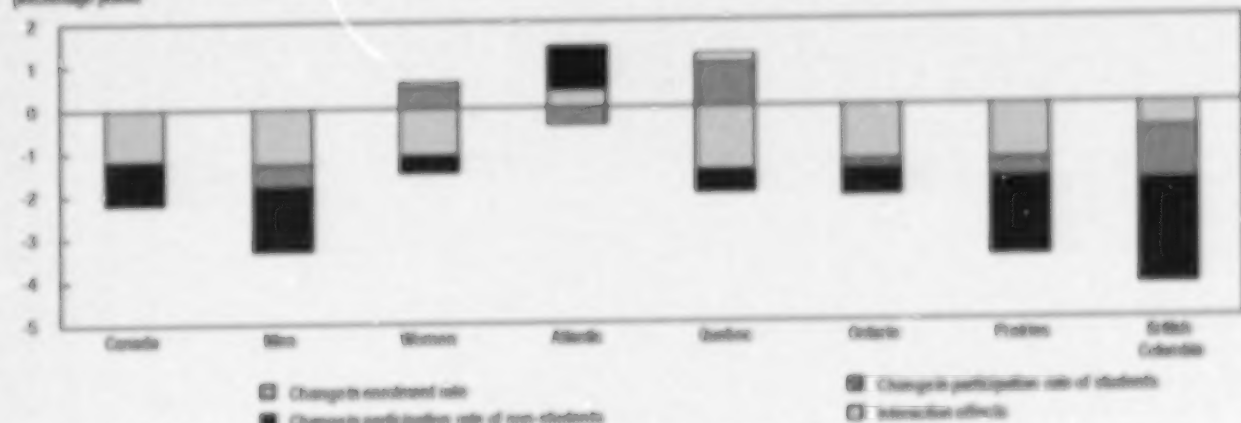
12. In this section, 15- to 19-year-olds and 20- to 24-year-olds are not analyzed separately, given that numbers for some types of education are not sufficient in the two age groups.



Chart 6

Changes in labour force participation rate, by cause, population aged 20 to 24, 2008 to 2014

percentage points



Source: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.

From 2008 to 2014, the percentage of 15- to 24-year-olds not in the labour force who were students changed little; in 2014, the figure was 84.0%. During the earlier period from 1990 to 1997, this percentage had increased¹³ from 79.7% to 85.4% (Table 3).

There were, however, changes from 2008 to 2014 in the composition of students not in the labour force. Compared to 2008, these people were more likely to be high school graduates pursuing university studies and less likely to be high school

students not yet having earned their diploma. These trends are reverse from those observed from 1990 to 1997.¹⁴

The percentage of students not in the labour force who were university graduates obtaining an additional degree did not increase; the 2014 figure was 3.1%, almost the same as in 2008. Therefore, continuation of university studies among some university graduates did not contribute significantly to the decline in the youth participation rate.

Table 3

Composition of population aged 15 to 24 who are not in the labour force, 1990 to 1997 and 2008 to 2014

	1990	1997	2008	2014
	percent			
Youth aged 15 to 24 not in the labour force who are				
Not enrolled	20.3	14.6	16.0	16.0
Enrolled	79.7	85.4	84.0	84.0
Total	100.0	100.0	100.0	100.0
Composition of enrolled population not in the labour force				
Non high school graduates, in high school	55.4	57.1	51.0	47.1
High school graduates, in college or CEGEP	4.1	3.4	3.8	5.3
High school graduates, in university	3.6	2.8	6.1	9.9
College or CEGEP graduates, in college or CEGEP	10.6	10.6	8.6	7.8
College or CEGEP graduates, in university	17.8	15.5	17.8	17.0
University graduates, in university	1.9	2.0	3.2	3.1
Other	6.6	8.5	9.7	10.1
Total	100.0	100.0	100.0	100.0

Source: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.

13. Because the LFS educational attainment question was revised in 1990, it is not possible to analyse changes since 1983.

14. The difference between trends from 1990 to 1997 and trends from 2008 to 2014 may, in part, reflect changes in the age distribution of the 15- to 24 age group. For example, from 1990 to 1997, the share of 15- to 19-year-olds rose from 48.0% to 50.3%; from 2008 to 2014, it fell from 49.0% to 46.4%.



Summary

The main purpose of this paper was to decompose the decline in labour force participation among 15- to 24-year-olds from 2008 to 2014 into components attributable to changes in school enrolment and in students' and non-students' labour force participation.

For 15- to 19-year-olds, the decrease was mainly the result of the decline in the labour force participation of students. At ages 20 to 24, the decline was the result of higher enrolment rates and lower labour force participation among non-students. Consequently, the percentage who are neither in the labour force nor enrolled in full-time studies rose more among 20- to 24-year-olds than among 15- to 19-year-olds.

Declines in labour force participation occurred among both young immigrants and the Canadian-born. However, the factors behind the decreases differed and the percentage neither in the

labour force nor enrolled in full-time studies declined among immigrants, while it increased among their Canadian-born counterparts.

For both 15- to 19-year-olds and 20- to 24-year-olds, the greatest decreases in labour force participation were in the Prairie Provinces and British Columbia. The percentage of youth neither in the labour force nor enrolled in full-time studies rose more in British Columbia than in the rest of Canada.

The smallest decreases in the participation rate of young people were in Quebec. The Atlantic Provinces was the only region where the labour force participation of 20- to 24-year-olds increased.

Trends from 2008 to 2014 in the participation rates of men and women aged 15 to 19 differed little. However, at ages 20 to 24, women's participation rate declined less than did men's.

Youth not in the labour force were as likely to be full-time students in 2014 as in 2008.



Appendix

Methodology

A standard accounting framework is used, similar to that used in Chong, Grossberg and Wilson (2012)¹⁵ and in Jorjaga (1995),¹⁶ to decompose changes in the participation rate of young people into four components: a component attributable to changes in enrollment rates for full-time students; a component attributable to changes in the participation rate of students; a component attributable to changes in the participation rate of non-students; and a component attributable to interactions between the effects of the enrollment rates and participation rates of students and non-students.

The participation rate may be expressed as

$$P_t = E_t * (P_{st}) + (1 - E_t) * (P_{nst})$$

where

P_t = overall participation rate in year t

E_t = enrollment rate in year t

P_{st} = participation rate of students in year t

P_{nst} = participation rate of non-students in year t

The difference between years $t-1$ and t may therefore be expressed as follows:

$$\Delta P_{t-1} = \Delta[E_t * (P_{st})] + \Delta[(1 - E_t) * (P_{nst})]$$

$$\Delta P_{t-1} = \Delta E_t * (P_{st-1}) + \Delta(1 - E_t) * (P_{nst-1})$$

$$+ (\Delta E_t * (E_{t-1}))$$

$$+ (\Delta E_t * (1 - E_{t-1}))$$

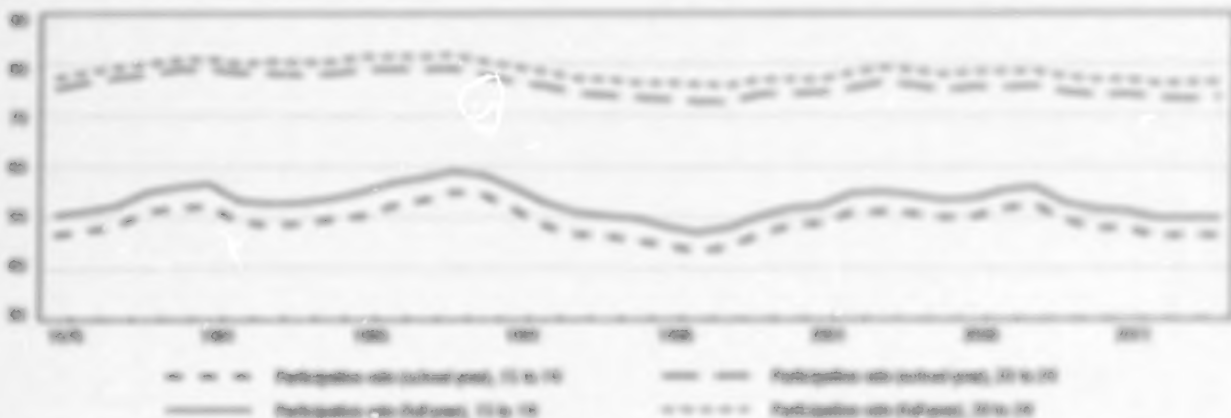
$$+ [(E_t * \Delta P_{st}) + (1 - E_t) * \Delta P_{nst}]$$

The first term is the component of the change in the participation rate attributable to changes in enrollment rates; the second term is the component attributable to changes in the labor force participation of enrolled students; and the third term is the component attributable to changes in the labor force participation of non-students. The fourth term is the component attributable to the interaction between the effects of changes in the enrollment rate and labor force participation among enrolled students and non-students. The contribution of the interaction term to the overall change in the participation rate is generally very small—although it appears in the charts, it is not included in the analysis.

Chart A.1

Average full-year and school-year participation rates, population aged 15 to 19 and 20 to 24, 1995 to 2010

percent



Notes: School-year participation rates are averaged for the months of January to April and September to November.

Source: Statistics Canada, Labour Force Survey (1995-1996 and 2000-2010).

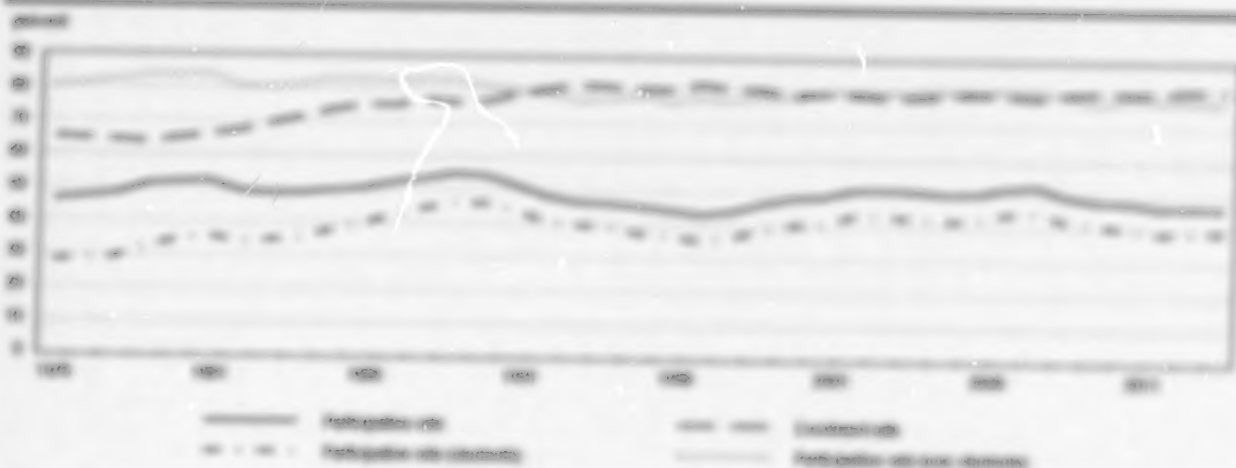
15. In Chong, Grossberg and Wilson (2012), part-time students are considered to be enrolled students; in this study, only full-time students are considered to be enrolled students.

16. As in this study, Jorjaga (1995) decomposes the decrease in the participation rate from 1980 to 1990 into components attributable to changes in enrollment rates, in the labor force participation of enrolled students, and in the labor force participation of non-students. The methodology is the same as in this study, except that Jorjaga does not explicitly estimate the interaction effects. Jorjaga's results are very close to the results presented here.



Chart 6.1

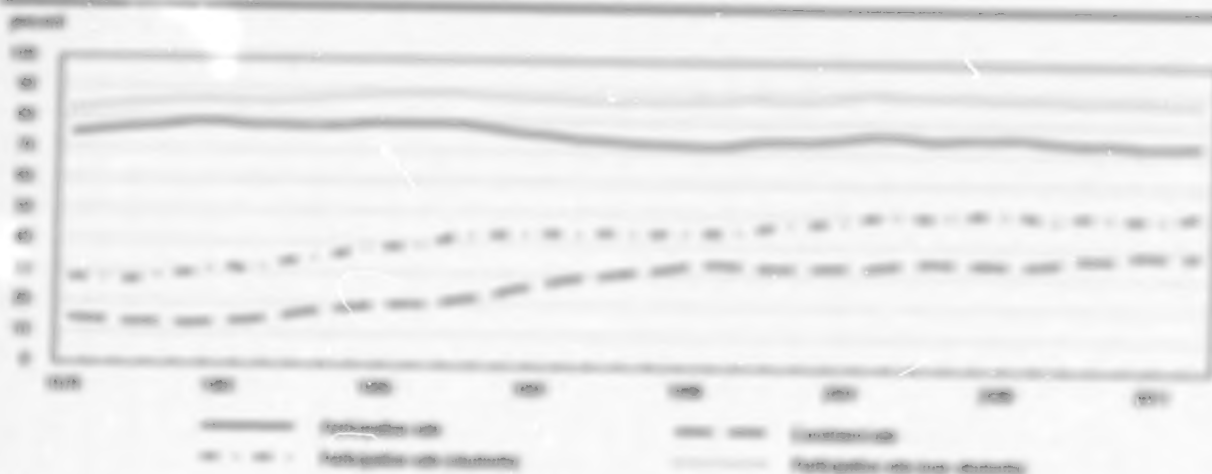
Participation rates and unemployment rates, population aged 15 to 24, 1975 to 2010



Source: Statistics Canada, Labour Force Survey, annual information based on the monthly survey in the Labour Force Survey to Statistics Canada.

Chart 6.2

Participation rates and unemployment rates, population aged 25 to 34, 1975 to 2010



Source: Statistics Canada, Labour Force Survey, annual information based on the monthly survey in the Labour Force Survey to Statistics Canada.



Table 2.1

Participation rate and unemployment rate, population aged 15 to 19, 2010 to 2012 and 2010 to 2012

	2010 to 2012			2010 to 2012		
	part	part	part	part	part	part
Female						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Male						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Female						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Male						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Female						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Male						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Female						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51
Male						
Participation rate	55.2	55.2	55.2	55.2	55.2	55.2
Unemployment rate	15.2	15.2	15.2	15.2	15.2	15.2
Participation rate (unemployed)	40.0	40.0	40.0	40.0	40.0	40.0
Participation rate (non-unemployed)	15.2	15.2	15.2	15.2	15.2	15.2
Percentage within 15 to 19 years old	51	51	51	51	51	51

Source: Virginia, by ZIP, Census 2010, Census Bureau, Virginia, 10/2012



Table A.2

Participation rate and enrolment rate, population aged 20 to 24, 1989 to 1997 and 2008 to 2014

	1989	1997	Change	2008	2014	Change
	percent		percentage points	percent		percentage points
Canada						
Participation rate	79.1	72.7	-6.4	75.8	73.7	-2.2
Enrolment rate	21.6	33.9	12.4	34.2	37.6	3.3
Participation rate (students)	42.7	44.2	1.5	51.2	51.2	-0.1
Participation rate (non-students)	89.1	87.3	-1.8	88.6	87.2	-1.4
Percentage neither in labour force nor enrolled	8.6	8.4	-0.2	7.5	8.0	0.5
Men						
Participation rate	81.9	76.2	-5.7	78.2	74.9	-3.3
Enrolment rate	22.5	32.6	10.1	30.4	33.4	3.0
Participation rate (students)	41.0	42.2	1.2	47.0	45.4	-1.6
Participation rate (non-students)	93.8	92.7	-1.1	91.8	89.7	-2.2
Percentage neither in labour force nor enrolled	4.8	4.9	0.1	5.7	6.9	1.2
Women						
Participation rate	76.2	69.0	-7.2	73.4	72.4	-1.0
Enrolment rate	20.6	35.3	14.7	36.2	41.9	5.7
Participation rate (students)	44.6	46.1	1.5	54.7	56.0	1.3
Participation rate (non-students)	84.4	81.5	-2.8	84.9	84.3	-0.7
Percentage neither in labour force nor enrolled	12.4	12.0	-0.5	9.3	9.2	-0.2
Atlantic						
Participation rate	72.6	66.3	-6.3	72.6	73.6	1.0
Enrolment rate	18.8	30.1	11.3	32.7	31.7	-1.0
Participation rate (students)	31.9	30.6	-1.2	43.3	42.0	-1.4
Participation rate (non-students)	82.1	81.7	-0.4	86.7	86.2	-0.5
Percentage neither in labour force nor enrolled	14.6	12.8	-1.7	8.9	8.0	-0.9
Quebec						
Participation rate	77.4	70.6	-6.8	76.5	75.7	-0.8
Enrolment rate	22.0	36.8	14.8	38.4	43.4	5.0
Participation rate (students)	41.5	44.1	2.6	58.2	60.8	2.6
Participation rate (non-students)	87.6	86.1	-1.5	86.0	87.2	1.2
Percentage neither in labour force nor enrolled	9.7	8.8	-0.9	7.4	7.2	-0.2
Ontario						
Participation rate	80.5	72.8	-7.7	73.4	71.3	-2.0
Enrolment rate	23.9	38.1	14.2	37.0	40.3	3.3
Participation rate (students)	46.6	47.4	0.8	49.0	48.6	-0.4
Participation rate (non-students)	91.1	88.4	-2.7	87.7	86.7	-1.0
Percentage neither in labour force nor enrolled	6.8	7.2	0.4	7.8	8.0	0.2
Prairies						
Participation rate	79.8	77.7	-2.1	80.9	77.4	-3.5
Enrolment rate	19.8	27.4	7.6	24.9	28.3	3.4
Participation rate (students)	39.5	45.7	6.1	52.2	50.5	-1.7
Participation rate (non-students)	89.7	89.8	0.1	90.4	88.0	-2.3
Percentage neither in labour force nor enrolled	8.3	7.4	-0.9	7.2	8.6	1.4
British Columbia						
Participation rate	82.4	73.8	-8.6	76.2	72.0	-4.2
Enrolment rate	17.1	27.7	10.6	33.6	35.0	1.4
Participation rate (students)	42.9	39.5	-3.4	48.3	44.6	-3.7
Participation rate (non-students)	90.5	86.9	-3.6	90.4	86.8	-3.6
Percentage neither in labour force nor enrolled	7.9	9.5	1.6	6.4	8.6	2.2

Source: Statistics Canada, Labour Force Survey, annual tabulations based on the months of January to April and September to December.



References

- Archambault, R. and L. Grignon. 1999. "Decline in Youth Participation in Canada in the 1990s: Structural or Cyclical?". *Canadian Business Economics* Summer 1999: 71-87.
- Beaudry, P., T. Lemieux and D. Parent. 2000. "What is Happening in the Youth Labour Market in Canada?". *Canadian Public Policy - Analyse de Politiques* XXVI (Supplement 1): S59-S83.
- Bernard, A. 2013. *Unemployment Dynamics Among Canada's Youth*. Economic Insights no. 24. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.
- Cheung, C., D. Granovsky and G. Velasco. 2015. *Changing Labour Market Participation Since the Great Recession: A Regional Perspective*. Discussion Paper 2015-2. Ottawa: Bank of Canada.
- Dennet, J., and A.S. Modestino. 2013. *Uncertain Futures? Youth Attachment to the Labor Market in the United States and New England*. Research Report 13-3, New England Public Policy Center.
- Ereeg, C.J., and A.T. Levin. 2013. *Labour Force Participation and Monetary Policy in the Wake of the Great Recession*. Working Paper 13/245. International Monetary Fund.
- Fortin, M., and P. Fortin. 1999. "The Changing Labour Force Participation of Canadians, 1969-96: Evidence from a Panel of Six Demographic Groups". *Canadian Business Economics* May 1999: 12-24.
- Jennings, P. 1998. *School Enrolment and the Declining Youth Participation Rate*. Research papers no. R-98-4E, Applied Research Branch. Hull: Human Resources Development Canada.
- Morissette, R., F. Hou and G. Schellenberg. 2015. *Full-time Employment, 1976 to 2014*. Economic Insights, no. 49. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada.